

R E M A R K S

Claims 1-18, 21-22, 25-28, 32, 35, 37 and 39 have been cancelled. New claims 40-43 have been added. Thus, an equal or greater number of claims have been cancelled to the number of newly added claims. Claims 19-20, 23-24, 29-31, 33-34, 36, 38, and 40-43 are pending, with claims 19-20, 23-24, 29-31, 33-34, 36 and 38 being amended.

The subject matter of claim 19 is substantially the same as the subject matter of cancelled claim 35, with the additionally recited features that the genes are "plant-expressible" and one of the genes is a selectable marker. No new matter has been added with the amendments to claims 19-20, 23-24, 29-31, 33-34, 36 and 38 or new claims 40-43. As such, entry and consideration thereof are respectfully requested.

Rejections under 35 U.S.C. §102(b)

The Examiner maintains the rejection of claims 19, 20, 25, 27, 31, 34-36 and 37 have been rejected under 35 U.S.C. as being anticipated by Thomas et al. In response to Applicants' arguments of April 10, 2003 the Examiner is of the position that Applicants' asserted differences in the claims and the prior art are not reflected in independent claims 19 and 20.

The Examiner acknowledges Applicants' discussion that the IRES activity in Thomas et al. was an artifact of the ODC gene where the CPMV middle component was inserted. However, the Examiner indicates that claims 19 and 20 do not require that the IRES, promoter sequence and structural genes have a particular relationship in terms of origin. Applicants traverse this rejection and withdrawal thereof is respectfully requested.

Claim 19, as amended, is directed to a process for producing stable cell clones or lines of transgenic plants or animals, which produce a protein of interest, which comprises introducing into cells a recombinant DNA molecule comprising

- (a) a transcriptional promoter;
- (b) a first plant-expressible gene linked to said transcriptional promoter;
- (c) a cDNA sequence element designated an internal ribosome entry site (IRES), which is located 3' to the first plant-expressible gene, whereby said IRES is a eukaryotic, plant-specific IRES of plant viral origin (d) a second plant-expressible gene located 3' to said IRES such that the second gene is placed under the translational control of said IRES, wherein said first plant-expressible gene or said second plant-expressible gene is a selectable marker.

The present invention may be distinguished from the prior art for at least the following reasons. The present invention requires that the IRES be of plant viral origin. As discussed previously, the IRES activity of Thomas et al. was an artifact of the ODC (rat ornithine decarboxylase gene). As such, the IRES of Thomas et al. was of rat origin and is therefore is not encompassed by the present invention.

In addition, the production of transgenic plants, animals or transgenic plant or animal cells using a vector for transformation requires an efficient selection method to be able to select the desired transformed product, which has the vector stably integrated in the genome, from among a vast background of untransformed cells. To achieve this selection, expression vectors in the prior art contain an expression cassette having a selectable marker under the control of a strong promoter. If the expression of the selectable marker is low, transformants will be killed by the selectable agent and, as a result, the recovery of transformants is inefficient, due to over selection/screening. On the other hand, if a low concentration of selectable agent is used to also capture those transformants having a low level of selectable marker expression, non-transformed cells or plants may also survive, rendering the recovery of transformants is inefficient, due to under selection/screening. As such, in the most desired situation,

strong expression of the selectable marker gene is desired in the transformants.

The present invention achieves this desired objective and provides an efficient process for producing stable cell clones or lines of transgenic plants or animals. The present invention is therefore not obvious over Thomas et al. and withdrawal of the rejection is respectfully requested.

Should the Examiner have any questions regarding the present application he is requested to please contact MaryAnne Armstrong, PhD (Reg. No. 40,069) in the Washington DC area at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fee required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

Gerald M. Murphy, Jr., #28,977

MaryAnne Armstrong, PhD #40,069

GMM/MAA: bmp
4360-0102P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000